

# PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

2005-11-18

## PCT

### NOTIFICATION CONCERNING TRANSMITTAL OF COPY OF INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (CHAPTER I OF THE PATENT COOPERATION TREATY)

(PCT Rule 44bis.1(c))

To:

ESTREEN, Lars  
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Date of mailing (*day/month/year*)  
10 November 2005 (10.11.2005)

Applicant's or agent's file reference  
03130PC-LE

#### IMPORTANT NOTICE

International application No.  
PCT/SE2004/000629

International filing date (*day/month/year*)  
23 April 2004 (23.04.2004)

Priority date (*day/month/year*)  
24 April 2003 (24.04.2003)

Applicant

AMC CENTURION AB et al

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Philippe Becamel

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference 03130PC-LE	<b>FOR FURTHER ACTION</b>		See item 4 below
International application No. PCT/SE2004/000629	International filing date ( <i>day/month/year</i> ) 23 April 2004 (23.04.2004)	Priority date ( <i>day/month/year</i> ) 24 April 2003 (24.04.2003 )	
International Patent Classification (IPC) or national classification and IPC H01Q 1/24, 5/00, 23/00			
Applicant AMC CENTURION AB			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input checked="" type="checkbox"/> | Box No. VII  | Certain defects in the international application  |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report 28 October 2005 (28.10.2005)
Facsimile No. +41 22 740 14 35	Authorized officer <p style="text-align: center; font-weight: bold;">Philippe Becamel</p> Telephone No. +41 22 338 70 90

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

RECEIVED

16 JUL 2004

To:

Kransell & Wennborg AB  
Box 27834  
115 93 Stockholm

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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year)

**13 -07- 2004**

Applicant's or agent's file reference  
03130PC-LE

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

PCT/SE 2004/000629

International filing date (day/month/year)

23.04.2004

Priority date (day/month/year)

24.04.2003

International Patent Classification (IPC) or both national classification and IPC

H01Q 1/24, H01Q 5/00, H01Q 23/00

Applicant

AMC Centurion AB et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further opinions, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/SE 2004/000629

**Box No. I      Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1-16	YES
	Claims		NO
Inventive step (IS)	Claims	6	YES
	Claims	1-5, 7-16	NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims		NO

**2. Citations and explanations:**

**Reference is made to the following documents:**

D1: Patent Abstract of Japan, abstract of JP 11 298231  
& JP 11 298231 A  
D2: Patent Abstract of Japan, abstract of JP 2000 236209  
& JP 2000 236209 A  
D3: WO 0120718 A1

D1 relates to a patch antenna device including a first (101) and a second (102) radiating element arranged parallel with a ground plate (104). The radiating elements are connected through a switch (105). By an on/off control of the switch, the antenna length, and thus change in resonance frequency, can be performed easily. The first (101) and second (102) radiating elements can have grounding portions by use of a capacitance (201), a capacitance can function as a DC blocking and as a high pass filter. The object of this previously known device is to get a miniaturized antenna device suited for e.g. portable telephones. Compare with the attached computer made translation of document D1, especially paragraphs [0001], [0014-0017].

D2 reveals a monopole or dipole antenna comprising at least two metal pieces (1a, 1c), connected through a diode switch (2a). A voltage signal controls the diode switch (2a) and between the feeding portion (7,8) of the antenna and the control signal input (6) a filter device (3e) is arranged for blocking radio frequency signals. Further, the non fed metal piece (1c) is connected to ground by a filter (3a).

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V.

1 (2)

The object of this known antenna is to achieve an antenna device that can have its resonance frequency switched under simple control.

D3, fig. 4-5, reveals an antenna device including two radiating elements parallel to a ground plane. The antenna elements can be connected or not by use of a voltage control switch. The control input is situated between the switch and the radiation element not including the RF-feed. A filter arrangement (502-504) is included to secure the control of the switch and also to control the RF-signals, see page 9 lines 13-18.

**Motivation**

The problem solved by the invention is to get an antenna device, including two radiating elements with a switch between them for obtaining a dual-frequency, small enough to suit a portable radio communication device.

Document D1, which is considered to represent the most relevant state of the art, discloses an antenna device from which the subject-matter of claim 1 differs in that the claimed invention also includes the voltage input means used to control the switch. The problem to be solved by the present invention may therefore be regarded as how to integrate a control of the switch (105) in such an antenna device disclosed by D1. A simple control of a switch in a similar antenna device is described in document D2 and provides the same advantages as in the present application. The skilled person would therefore regard it as a normal option to include this control feature in the antenna device described in document D1 in order to solve the problem posed.

Therefore, the solution proposed in claims 1 and 16 of the present application cannot be considered as involving an inventive step (Article 33(3) PCT).

Further, it must be considered obvious to a person skilled in the art, in view of D2 and D3, to use filter arrangements, known per se, to secure the control of the

.../...

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V.

2 (2)

switch and also to control the RF-signals in the antenna elements. Therefore, at least the subject matter of claims 2-5 is considered to lack inventive step.

The subject matter of claims 7-8, 10 only reveals slight constructional changes related to the first radiating element which come within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen. Consequently, the subject-matter of claims 7-8 and 10 also lacks inventive step.

To design at least one of the radiating elements with a protruding portion as stated in claim 9 to secure a certain space between them is considered to be obvious to a person skilled in the art and thus lacks inventive step.

Further, claims 11-15 are unclear cf. Box VIII. However, the claims are not considered to involve anything over common knowledge for skilled persons.

According to the arguments stated above, the invention claimed in claims 1-5 and 7-16 is novel but is not considered to involve an inventive step.

The subject matter of claim 6 is novel and is considered to involve an inventive step.

There is no reason to doubt the industrial applicability of the invention.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/SE 2004/000629

Box No. VII Certain defects in the international application

The following defects in the form or content of the international application have been noted:

In claim 8 the feature "the DC blocking arrangement (50)" is mentioned as if it is mentioned in an earlier claim, but it is not. Claim 1 mentions detail 50 as a "high pass filter (50)".

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/SE 2004/000629

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawing or on the question whether the claim are fully supported by the description, are made:

Claims 11-15 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claims attempt to define the subject-matter in terms of the result to be achieved which merely amounts to a statement of the underlying problem.